Emerging and Re-emerging Infectious Diseases
UCSD School of Medicine
Fall 2012 FPM 287 / MED 287
Schedule #:760184 / 760185

LOCATION: MET Room 304
TIMES: Tuesdays, 2pm to 5pm
DATES: Sept 11th to Nov 6th (exam on Nov 13th for 4-unit students)

INSTRUCTORS
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Course Description
Emerging and Re-emerging Infectious Diseases is a single quarter seminar-based course designed to introduce medical and graduate students to concepts of emerging infectious diseases. In our global environment deforestation, mass food production, frequent world travel, human and animal interaction, medical advances, and political upheaval, among many other factors, have contributed to the emergence of new and re-emergence of once contained infectious diseases. Developing a clear understanding of factors associated with disease emergence and re-emergence can help medical and public health professionals to identify, study, and control new and renewed epidemics and outbreaks.

Topics to be covered include emerging diseases or problems, including contributing factors in emergence/re-emergence, surveillance, epidemiology, prevention, and methodology for studying these diseases. This course is designed to increase students understanding and knowledge of emerging and re-emerging infections and enhance their abilities to apply skills needed to study, prevent and control infectious diseases of global importance. Classes will primarily consist of interactive symposia between students and guest speakers who are experts in the area of emerging and re-emerging infectious diseases that will be discussed each week. Students will have the unique opportunity of interacting with these professionals in a dynamic seminar environment to enhance learning, and will have access to the most current emerging infectious disease information. As part of their weekly assignment, students will complete readings related to topic areas specific to the current week’s symposia. The course will promote student-faculty interaction and discussion of disease topics. Students will also be encouraged to use library resources, such as PubMed, to self-learn on topics of interest.
This course is required for doctoral students in the joint program in Global Health, and will be strongly encouraged as an elective for medical students and doctoral students in other programs who have an interest in infectious diseases, pathology, and global health. Medical students will be encouraged to take the course as a 2 unit elective and graduate students in the joint doctoral program in Global Health will be required to take the course for 4 units. Other graduate students will be allowed to select the 2 or 4 unit option. Requirements for 2 and 4 units will differ as described in the evaluation procedures.

**Learning Objectives**
The overall goal of this course is to raise students’ awareness of emerging and re-emerging infectious diseases including potential reasons for emergence, current trajectories of transmission, prevention, and challenges for research, treatment and prevention of specific diseases discussed. By completion of this course students will be expected to:

1) be able to identify diseases that are emerging or re-emerging
2) understand factors that contribute to and mechanisms for emergence and re-emergence of infectious diseases in different settings
3) have a general knowledge of the symptoms and epidemiology (e.g. current transmission risks, global spread) of specific emerging and re-emerging diseases
4) be able to identify research, treatment, and prevention needs and challenges for specific emerging and re-emerging infectious diseases
5) be familiar with the emerging and re-emerging infectious disease literature and possess knowledge of journals containing current emerging infectious disease information

**Evaluation Procedures:**
This course will be offered for 2 or 4 units as described above. All students in the joint doctoral program in Global Health will be required to complete this course for 4 units. All other medical and graduate students will be allowed to choose the 2 or 4 unit option for this course, as it will be considered one of their electives.

**2 Units:** Those taking this course for 2 units will be asked to complete weekly reading from chapters in the text book and assigned journal articles. Students will be expected to attend class and engage in classroom discussions. If a student needs to miss a class she/he can make up the missed class period by researching the missed emerging infectious disease topic and writing a three page paper on this topic. Evaluation will be based on the following components:

1. Attendance and active participation 50%
2. Prepare and lead one group discussion topic 50%

**4 Units:** Those taking the course for 4 units will be expected to complete the requirements for 2 units and will also complete a term paper and a final exam.

1. Attendance and active participation 10%
2. Prepare and lead one group discussion topic 15%
3. Term paper 40%
4. Final Exam 35%
**Participation**

1. **Class participation** – students are expected to come to each lecture prepared for a discussion of the topic.
2. **Missed classes** – if a lecture is missed, participation marks can be made up through submission of a 2-page, double spaced essay on a topic from the missed lecture. Instructions for make-up papers are detailed below.
3. **Group discussion** (15 min to present per student and 15 min to discuss topic) – students will sign-up to prepare and lead one group discussion on a topic chosen from a selected list of relevant issues. These discussions will give students an opportunity to delve into the details of factors and mechanisms contributing to emerging and re-emerging infections. Students will be expected to come prepared to introduce the topic to the class, present evidence or findings from the literature (suggested papers will be provided along with topics), and provide at least 3 questions for discussion.

Make-up assignments should be 2 pages, double-spaced in 11 or 12 point regular font (Times, Arial, Courier, Calibri). Paper should cover the topic from the missed class and include citations from reading assignments and a minimum of 4 additional sources. Topics that should be covered include: 1) biology, pathology, and etiology of the disease or problem; 2) history of emergence/ re-emergence and reasons for emergence/re-emergence; 3) epidemiology and surveillance including, global geographic distribution, temporal trends, differences in surveillance by development of countries, and additional important factors; 4) treatment and prevention including, antibiotics/antivirals, vaccine development, behavioral and structural strategies for prevention, and addition important factors; and 5) future directions and structural/treatment/research needs. Papers should be clear, concise, accurate, and proof read.

**Term paper**

Mid-term paper – a 10 page, double spaced paper (11 or 12 point regular font Times, Arial, Courier, Calibri) on an emerging disease topic of your choice will be submitted on **Oct 23**. The paper can take one of the following forms:

a. Discuss the epidemiology, emergence, prevention and control, as well as the global significance of an emerging infectious disease of your choice that was NOT covered in the syllabus.

b. Using the typical factors contributing to emergence of infectious disease, discuss, with examples, the process and impact of each of these factors, along with methods of surveillance and control relevant to each.

c. Using the list of typical factors contributing to emergence of infectious disease, discuss the potential for emergence of an hypothetical disease or re-emergence of a disease that is considered under control, and explain how you would conduct surveillance and control measures to eliminate/contain this threat.

d. Students are welcome to submit other ideas for their term paper for approval from the course instructors.
Students should submit a one-page abstract of their proposed paper to Dr. Rusch via e-mail for approval by Oct 2. Overlapping topics will not be allowed (i.e., two students writing about the same disease), so please confirm your topics prior to starting the paper.

Total of 100 possible marks will be assigned for the term paper (40% of total grade). The following criteria will be considered when grading the papers: 1) content – concise, clear and thorough discussion of the topic, illustrating an understanding of the relevant themes, with accurate citations provided; 2) originality – creativity and originality, thoughtful discussion of the topic rather than repetition of text materials; and 3) clarity – clear structure and organization, readability. Late papers and papers not adhering to format, and not including references will not be considered.

Paper should include a title page and reference list (not included in page count). Please use the AMA style reference and citation format, as described for JAMA (http://jama.ama-assn.org/misc/ifora.dtl#References) for all references and citations. Do not include footnotes. Please proof read your papers for grammar and spelling, excessive errors will result in reduction of the paper score.

**Final exam**

1. Final exam – the final exam will be held on Nov 13. It will take approximately 1 hour to complete. The exam will be a mixture of multiple choice and short answer questions and will cover material from all lectures, assigned readings from the text, as well as papers of interest assigned throughout the term.

**Grading**

Grading will be based on S/U for all students completing the course for 2 units and a letter grade for all students completing the course for 4 units. Letter grades will be assigned using a standard scale as follows:

- A  94-100%
- A-  90-93%
- B+  87-89%
- B   84-86%
- B-  80-83%
- C   70-79%
- F   0-69%

For S/U, students must attend all classes or complete a non-attendance assignment (for a maximum of two classes only) and complete and submit all reading questions to receive the “S” grade.
# Fall 2012 Course Schedule for FPM/MED 287: Emerging & Re-emerging Infectious Diseases

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>1</td>
<td>Sep 11</td>
<td>2:00pm: Overview of Course and Introduction to EID&lt;br&gt;4:00pm: Bovine TB</td>
<td>Melanie Rusch, PhD&lt;br&gt;Timothy Rodwell, MD, PhD</td>
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<tr>
<td>2</td>
<td>Sep 18</td>
<td>2:00pm: Global Climate Change&lt;br&gt;4:00pm: Recent topics in EID</td>
<td>Stanley Maloy, PhD&lt;br&gt;Group Discussion</td>
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<td>3</td>
<td>Sep 25</td>
<td>2:00pm: Influenza&lt;br&gt;3:00pm: International travel/commerce&lt;br&gt;4:00pm: Malaria</td>
<td>Robert Schooley, PhD&lt;br&gt;Student-led discussion&lt;br&gt;Kimberly Brouwer, PhD</td>
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<td>4</td>
<td>Oct 2</td>
<td>2:00pm: Nosocomial Infections&lt;br&gt;3:00pm: Medical advances/microbial adaptation&lt;br&gt;4:00pm: Zoonoses</td>
<td>Francesca Torriani, MD&lt;br&gt;Student-led discussion&lt;br&gt;Melanie Rusch, PhD</td>
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<td>5</td>
<td>Oct 9</td>
<td>2:00pm: Syphilis and STIs&lt;br&gt;3:30pm: Social &amp; political upheaval / Public Health Infrastructure Failure</td>
<td>Melanie Rusch, PhD&lt;br&gt;Student-led discussion</td>
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<td>6</td>
<td>Oct 16</td>
<td>2:00pm: Bioterrorism&lt;br&gt;3:00pm: Food and water technology&lt;br&gt;4:00pm: Prions</td>
<td>Steven Waterman, PhD&lt;br&gt;Student-led discussion&lt;br&gt;Christina Sigurdson, PhD</td>
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<td>7</td>
<td>Oct 23</td>
<td>2:00pm: Dengue&lt;br&gt;3:00pm: Environmental alterations, natural disasters&lt;br&gt;Term paper due (4-unit only)</td>
<td>Sujan Shresta, PhD&lt;br&gt;Student-led discussion</td>
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<tr>
<td>8</td>
<td>Oct 30</td>
<td>2:00pm: HIV&lt;br&gt;3:00pm: Demographic or Sociobehavioral changes&lt;br&gt;4:00pm: Coccidiomycoses</td>
<td>Jamila Stockman, PhD&lt;br&gt;Student-led discussion&lt;br&gt;Jose-Luis Burgos, MD</td>
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<td>9</td>
<td>Nov 6</td>
<td>2:00: Review</td>
<td>Melanie Rusch, PhD</td>
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<td>10</td>
<td>Nov 13</td>
<td>2:00pm: Final exam (4-unit only)</td>
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